

## REMARKS/ARGUMENTS

Applicant representative Ding Yu Tan would like to first thank the Examiner for the great courtesy extended to him during the previous examiner telephone interview, of which it was greatly appreciated. The Examiner was indeed very helpful in suggesting for effective ways to overcome the current rejections under 35 USC 112.

**Rejection of claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58 under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Applicant asserts that disclosure can be explicit, inherent, and implicit. Indeed, MPEP 2163 recites:

“ .... **newly added claim limitations** must be **supported in the specification through express, implicit, or inherent disclosure**. An amendment to correct an obvious error **does not constitute new matter** where one skilled in the art would not only recognize the existence of the error in the specification, but also recognize the appropriate correction. In re Oda, 443 F.2d 1200, 170 USPQ 268 (CCPA 1971)....”

Based on at least the above cited passage from MPEP, the amending of “gaps” to be “first gaps” as found in amended independent claim 21 at lines 10 & 13, claim 35 at lines 12 & 14, and claim 40 at line 9 are found to be **fully inherently** supported at least by Fig. 2 of the present application. Meanwhile, the amending of “gaps” to be second gaps” as found in amended claim 28 at line 2, claim 35 at line 21, and claim 44 at line 2 as well as the “second gaps” found throughout the other pending claims are clearly and fully inherently supported at least by Fig. 3 and page 12, lines 16-30 of the specification. Please take notice of the two regions designated as the HDPCVD layer 38 in Fig. 3. In addition, the following passage taken from page 12, lines 16-30 of the specification of the present application also, for example, further inherently define the “second gaps”: “ ..... An HDPCVD step is then carried out to form layer 38. FIG. 3 shows an early stage of the deposition of HDPCVD layer 38, which is deposited onto

the surface of the substrate 20, onto the sides of the wiring lines 34, the sides of the surface layer 22 and protective layer 26, and the sides and top of the cap layer 28...”

In other words, the material being filled, which is the HDPCVD layer 38 described in page 12, lines 16-30 of the specification, in Fig. 3 inside the “gap 36” (also known as a “first gap”, see Fig. 2) help to successfully define the “second gap” as shown, for example, in Fig. 3; therefore, there should be no confusion as to which are “first gaps” (see Fig. 2) and “second gaps” (see Fig. 3) as contained in all of the pending claims.

Applicant asserts that the aforementioned claim amendments regarding “first gaps” and “second gaps” and the clarity in definition with respect to the “first gaps” and “second gaps” should then overcome all of the rejections of claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58 under 35 U.S.C. 112, second paragraph.

**Rejection of claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58 under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement.**

Applicant asserts that the amending of “gaps” to be second gaps” as found in amended claim 28 at line 2, claim 35 at line 21, and claim 44 at line 2 as well as “second gaps” which are found throughout the other pending claims are clearly and fully inherently supported by Fig. 3 and page 12, lines 16-30 of the specification.

First, for example, please take notice of the two regions designated as the HDPCVD layer 38 in Fig. 3. In addition, the following passage taken from page 12, lines 16-30 of the specification of the present application also further inherently define the “second gaps” in greater details: “ ..... An HDPCVD step is then carried out to form layer 38. FIG. 3 shows an early stage of the deposition of HDPCVD layer 38, which is deposited onto the surface of the substrate 20, onto the sides of the wiring lines 34, the sides of the surface layer 22 and protective layer 26, and the sides and top of the cap layer 28...”

Indeed, the material being filled, namely the HDPCVD layer 38 as described in page 12, lines 16-30 of the specification and also, for example, shown in Fig. 3 (identified twice as the element 38 in Fig. 3) help to **successfully explicitly and**  
5 **inherently define** the “second gap” as found in the aforementioned corresponding claims; therefore, there should be no confusion as to what “second gaps” (see Fig. 3) are defined to be and how they relate to “first gaps” as claimed in the pending claims.

10 In addition, the following sets of claim features as found in the independent claims 21, 35, and 40 have clearly explained how “first gaps” are being changed/converted to “second gaps”:

**Claim 21:**

15 “depositing a dielectric material within the first gaps[[,]] and on the remaining portions of the cap layer disposed above the wiring lines at least when the depositing begins, an initial stage of the depositing forming initial layers of the dielectric material over the substrate, covering the exposed side portions of the wiring lines and on at least portions of the remaining portions of the cap layer, the initial stage of the depositing forming second gaps between the initial layers on adjacent side portions of  
20 pairs of the wiring lines”

**Claim 35:**

25 “depositing a dielectric material within the first gaps[[,]] and on the remaining portion of the cap layer above the wiring lines at least during a time when the depositing begins, an initial stage of the depositing forming initial layers of the dielectric material over the substrate, covering the exposed side portions of the wiring lines and over at least portions of the remaining portion of the cap layer so that second gaps are defined by the initial layers formed over the exposed portions of the wiring  
30 lines”

**Claim 40:**

“depositing a dielectric material in an initial stage process to form layers of the dielectric material over the substrate and covering the exposed side portions of the wiring lines and over at least portions of the remaining portion of the cap layer so that second gaps are defined by the initial layers between pairs of the wiring  
5 lines, .....

wherein the remaining portion of the cap layer is partially etched prior to the depositing to include slanted surfaces, the remaining portion of the cap layer protecting top corner sections of the wiring lines during the HDPCVD process”

10 For the above set of features from claim 40, additional proper support is also found in Figs. 7 and 8.

Once again, therefore, there should be no confusion as to what “second gaps” are defined to be and how they (second gaps) relate to “first gaps” as claimed in  
15 claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58.

Applicant asserts that the aforementioned claim amendments regarding “first gaps” and “second gaps” should overcome all of the rejections of claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58 under 35 U.S.C. 112, first paragraph.  
20

#### **Other Remarks**

Applicant also assert that newly proposed claim amendments of “and on” in  
25 claim 21 at line 13 and claim 35 at line 14 located prior to “the remaining portions of the cap layer” are clearly inherently supported by Fig. 3 and page 12, lines 16-30 of the specification. Therefore, no new matter has been introduced.

Applicant kindly requests the Examiner to evaluate all pending claims including  
30 claims 21-29, 31, 32, 35, 40-44, 46, 48-50, 52-54, 56, and 58 in consideration for their allowance.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

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/Winston Hsu/

Date: 04/02/2009

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/991,196

11/20/2001

Chih-Chien Liu

20952.4003

3908

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7590

03/17/2009

NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION  
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MERRIFIELD, VA 22116

EXAMINER

SERGEANT, RABON A

ART UNIT

PAPER NUMBER

1796

NOTIFICATION DATE

DELIVERY MODE

03/17/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

winstonhsu.uspto@gmail.com

Patent.admin.uspto.Rcv@naipo.com

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<b>Interview Summary</b>	<b>Application No.</b> 09/991,196	<b>Applicant(s)</b> LIU ET AL.	
	<b>Examiner</b> Rabon Sergeant	<b>Art Unit</b> 1796	

All participants (applicant, applicant's representative, PTO personnel):

(1) Rabon Sergeant. (3) \_\_\_\_.

(2) Ding Tan. (4) \_\_\_\_.

Date of Interview: 12 March 2009.

Type: a) ☒ Telephonic    b) ☐ Video Conference  
c) ☐ Personal [copy given to: 1) ☐ applicant    2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes    e) ☒ No.  
If Yes, brief description: \_\_\_\_.

Claim(s) discussed: 21, 28, 35 and 40.

Identification of prior art discussed: N/A.

Agreement with respect to the claims f) ☐ was reached.    g) ☐ was not reached.    h) ☒ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Rabon Sergeant/ Primary Examiner, Art Unit 1796	
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## Summary of Record of Interview Requirements

### Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

#### Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

#### 37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,  
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

#### Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Tan and the examiner discussed how the specification and drawings provide support for the production of gaps and how these gaps, through the process of deposition, are converted to the argued "second gaps". Mr. Tan provided a concise explanation of how the language within page 12 of the specification and Figure 3 provide support for this explanation. The examiner indicated that this concise explanation should be clearly set forth on the record. The examiner further indicated that the claims should clearly reflect how the "gaps" are converted to the argued "second gaps". Due to the fact that such language pertaining to the gaps had not been claimed earlier, the examiner indicated that such an amendment would not be entered after final rejection.